The American Journal of Surgery 221 (2021) 309–314

Contents lists available at ScienceDirect

The American Journal of Surgery

journal homepage: www.americanjournalofsurgery.com

A multi-institutional study of patient-derived gender-based discrimination experienced by resident physicians

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ARTICLE INFO

Article history:
Received 11 June 2020
Received in revised form
16 September 2020
Accepted 11 October 2020

Presentation Details: Accepted for Podium Presentation at the Annual Association for Surgical Education Meeting, Seattle, WA on April 30, 2020.

Keywords:
Gender-based discrimination (GBD)
Resident
Patient

ABSTRACT

Background: This study characterizes prevalence, frequency, and forms of patient-derived gender-based discrimination (GBD) experienced by resident physicians, as well as their experiences witnessing and reporting patient-derived GBD.
Methods: A web-based survey was sent to residents from 12 programs at three academic institutions.
Results: Response rate was 47.9% (309/645) with 55.0% of respondents identifying as women. Women were more likely than men to experience patient-derived GBD during residency (100% vs 68.8%, $p < 0.001$), including inappropriate physical contact, receiving less trust from patients, and being mistaken for a nurse ($p < 0.001$). While 85.9% of residents personally experienced and 95.0% of residents witnessed patient-derived GBD, only 3.4% of residents formally reported patient-derived GBD. Women were more likely to report negative personal and professional consequences of patient-derived GBD.
Conclusions: Patient-derived GBD is pervasive and disproportionately affects women residents. Current reporting mechanisms are not adequately capturing nor addressing patient-derived GBD.

Introduction

Gender-based discrimination (GBD) constitutes actions, behaviors, and policies resulting in unequal treatment due to an individual's gender.[1] Women physicians have been found to experience higher rates of sexual harassment and abuse than male physicians, with GBD negatively impacting women physicians over the course of their careers.[2,3] Beginning in medical school, the majority of women medical students report having personally experienced GBD, with the highest rates of GBD described during general surgery clerkship.[4–8] GBD has been shown to impact choice of specialty, with GBD resulting in reduced recruitment into surgical specialties of women medical students.[1,6] The negative impact of GBD continues into residency training, with recent studies conducted among surgical and non-surgical trainees demonstrating that women residents are significantly more likely than men to experience gender-based discrimination and bias.[9,10]

Beyond the harmful effects of GBD during residency, GBD continues to impact women physicians after completion of their training.[1] Mistreatment within the medical context is associated with higher rates of burnout and depressive symptoms in women than in their male colleagues.[2,3,11] GBD negatively affects women physicians' sense of professional self-confidence with broad-reaching psychosocial sequelae including poor self-esteem, emotional exhaustion, and depression.[2,6,12–14] There are stark disparities in women physicians' career advancement as compared to their male colleagues, suggesting that GBD exists in academic medicine.[1,12] Professional advancement occurs for women at a slower pace at academic institutions than for men, women physicians continue to receive lower pay than their male colleagues, and men outnumber women as medical university faculty, full-time professors, and chairs of clinical departments.[15–17]

Prior studies have demonstrated that patients represent the most frequent source of GBD for resident physicians.[9,10] Few studies have specifically examined the physician experience of patient-derived GBD, and these studies are limited by low sample size, do

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https://doi.org/10.1016/j.amjsurg.2020.10.015
0002-9610/

not focus on resident physicians, or focus specifically on sexual harassment.[2,18–20] Quantitative analysis of the incidence, frequency, and forms of patient-derived GBD in residency training is lacking.

Despite the serious individual and system-wide consequences of GBD, few evidence-based interventions exist to address this issue. Serving on the front line of patient care, resident physicians represent a particularly vulnerable population to GBD with professional and psychological repercussions extending over their careers.[1,15–17] Understanding how GBD may be affecting residents is essential, as GBD and burnout are correlated not only with poor quality of life, depression, and suicidal ideation, but has also been linked to adverse patient-care outcomes, increased medical errors and poorer patient-perceived quality of care.[13,21,22] With the majority of women residents reporting GBD, it is necessary to identify where, when, and how this discrimination manifests with the aim of developing interventions to address this issue.[9]

Material and methods

This study was conducted under approval from all participating institutions' review boards. A 40-item web-based survey was designed to specifically assess patient-derived GBD in resident physicians. Survey contents included demographics as well as the frequency that residents experienced and witnessed patient-derived GBD, the locations at which residents most frequently experienced patient-derived GBD, official reporting of patient-derived GBD (and if reported, the result of the report), and the impact of patient-derived GBD on resident physicians (including job satisfaction, quality of patient-care, and burn out). Questions were developed with the assistance of a previously published survey of GBD among resident physicians and from a survey that specifically examined sexual harassment of women physicians by patients.[9,10] A focus group of resident physicians was used to tailor these questions, and the full survey was subsequently piloted with a subset of resident physicians for readability, clarity, and interface usability.

Approval was sought from 25 program directors (representing a range of medical and surgical specialties) at three academic institutions in the greater Boston area prior to enrollment in the study. Twelve program directors representing 11 specialties provided approval for their residents to receive the survey. Surveys were sent to all current resident physicians within these 12 residency programs from April through August 2019 via a secure web platform. The twelve residency programs included: general surgery, vascular surgery, neurosurgery, anesthesiology, pediatrics, radiology and medicine residency programs at one institution, otolaryngology (ENT), urology, and internal medicine-pediatrics residency programs at a second institution, a combined emergency medicine between these two institutions, and an anesthesiology residency program at a third institution.

De-identified responses were analyzed for all complete surveys. Univariate analysis was performed to compare demographic factors between residency programs and institutions. Fisher's exact test was used for all categorical data and student's t-test for continuous variables. Personal or witnessed experience of patient-derived GBD was measured on a 0–10 scale with 0 representing no experience and 10 representing very frequent experience. Mean values for experienced and witnessed patient-derived GBD were compared between women and men using student's t-test. Experience of patient-derived GBD was also compared between men and women as a dichotomous variable (no experience vs. any reported value 1–10) using a x^2 test. Comparison of patient-derived GBD between men and women was collapsed across institutions and residency programs given the absence of statistically significant difference between institutions and programs. All statistical analyses were performed using Stata/SE statistical software, version 15 (StataCorp LLC, College Station, TX). Significance was defined at an alpha level of 0.05.

Results

The survey was sent to 645 current resident physicians. Overall response rate was 47.9% (309 residents) with response rates varying from 25.0% to 81.8% by individual programs (Table 1). Approximately one-half (55.0%) of survey respondents were women, though the percentage of women residents varied by residency program (range 25.0%–83.3%). The average age of respondents was 30.2 ± 2.5 years, with the majority of respondents identifying as White (64.7%). Respondent post-graduate year ranged from 1 to 7 years, with the greatest number of survey respondents (31.1%) currently in post-graduate year 3 of their medical training. There were no significant differences in age, race, ethnicity, post-graduate year, or belonging to a surgical specialty between men and women who took the survey (Table 1).

Overall, 262 (85.9%) respondents experienced patient-derived GBD during their residency training (Table 2). Women were significantly more likely than men to experience patient-derived GBD (100.0% vs 68.8%, p<0.001). The mean frequency of personally-experienced patient-derived GBD was 6.4 ± 2.4 (on 0–10 scale with 0 = none and 10 = very frequent) for women as compared to 1.6 ± 1.9 for men ($p < 0.001$). Notably, there was no difference in patient-derived GBD by resident race, institution, resident age, resident postgraduate year, or belonging to a surgical vs medical specialty. An overwhelming majority of both men and women responded that they had witnessed patient-derived GBD, with no significant difference between men and women (92.8% men vs 96.9% women, $p = 0.115$). Patient-derived GBD occurred across multiple hospital locations (clinics, intensive care units, operating rooms, pre-operative care units, emergency departments, inpatient wards, and patient rooms), with women reporting significantly higher frequency of patient-derived GBD across all locations. The most commonly cited location for patient-derived GBD was in patients' rooms, reported by 89.5% of women and 40.4% of men ($p < 0.001$).

Regarding specific types of GBD experiences, women were significantly more likely than men to experience patient-derived GBD in a variety of forms (Fig. 1). Specifically, women were more likely to report that they had been mistaken for a nurse by a patient (97.7% vs 27.3%; $p < 0.001$), they had been referred to by an unprofessional term of endearment (such as "honey", "sweetie", or "buddy") by a patient (90.1% vs 60.2%; $p < 0.001$), they had been

Table 1
Demographic characteristics of resident respondents.

Characteristic	Women	Men	All Residents
Respondents n (%)	170 (55.0)	139 (45.0)	309
Mean age Years (SD)	30.0 (2.2)	30.5 (2.8)	30.2 (2.5)
Race n (%)			
White	110 (64.7)	90 (64.8)	200 (64.7)
Black	4 (2.4)	8 (5.8)	12 (3.9)
Asian	43 (25.3)	35 (25.2)	78 (25.2)
Other	13 (7.6)	6 (4.3)	19 (6.1)
Hispanic n (%)	9 (5.3)	10 (7.2)	19 (6.2)
Mean PGY[a] Year (SD)	2.6 (1.1)	2.7 (1.3)	2.6 (1.2)
Surgical specialty[b] n (%)	39 (22.9)	43 (30.9)	82 (26.5)

[a] Post-graduate year.
[b] Surgical specialty included general surgery, vascular surgery, neurosurgery, ENT, and urology.

Table 2
Experience of patient-derived GBD.

Characteristic	All Residents n = 305	Women n = 167	Men n = 138	P-Value
Patient-derived GBD n (%)	262 (85.9)	167 (100.0)	95 (68.8)	**<0.001**
Patient-derived GBD score[a] Mean (SD)	4.2 (0.2)	6.4 (2.4)	1.6 (1.9)	**<0.001**
	n = 301	n = 163	n = 138	
Witnessed patient-derived GBD n (%)	286 (95.0)	158 (96.9)	128 (92.8)	0.115

[a] Score based on 0–10 scale with 0 indicating "no experience" and 10 indicating "very frequent experience".

referred to by their first name by a patient (88.9% vs 60.2%; $p < 0.001$), they had experienced a negative or inappropriate exchange with a patient specific to their gender (74.5% vs 26.9%; $p < 0.001$), and that they had been mistaken for a non-nurse or non-physician member of the team (71.1% vs 30.6%; $p < 0.001$). This occurred despite the fact that women were significantly more likely than men to introduce themselves as "Dr. [Last Name]" (80.6% vs 66.9%; $p = 0.006$), and significantly less likely than men to introduce themselves by their first name only (14.1% of women vs 33.1% of men, $p < 0.001$). Furthermore, women were more likely to respond that they had been asked by a patient to bring or remove food trays, retrieve blankets or other items, help them use the bathroom, or perform another activity outside of their primary duties as a physician (92.6% vs 72.8%; $p < 0.001$), been hugged or touched by a patient (not including a handshake or contact performed as part of a physical exam or as standard patient-doctor interaction) (58.2% vs 25.8%; $p < 0.001$), and felt they had received less trust from a patient based upon their gender (71.1% vs 29.6%; $p < 0.001$). Men were more likely than women to have a patient request a doctor of a different gender than their own (38.8% vs 20.0%; $p = 0.010$). There were no significant differences between men and women for being referred to by a patient with a term of profanity or having a patient expose a body part to the physician in a sexually suggestive way.

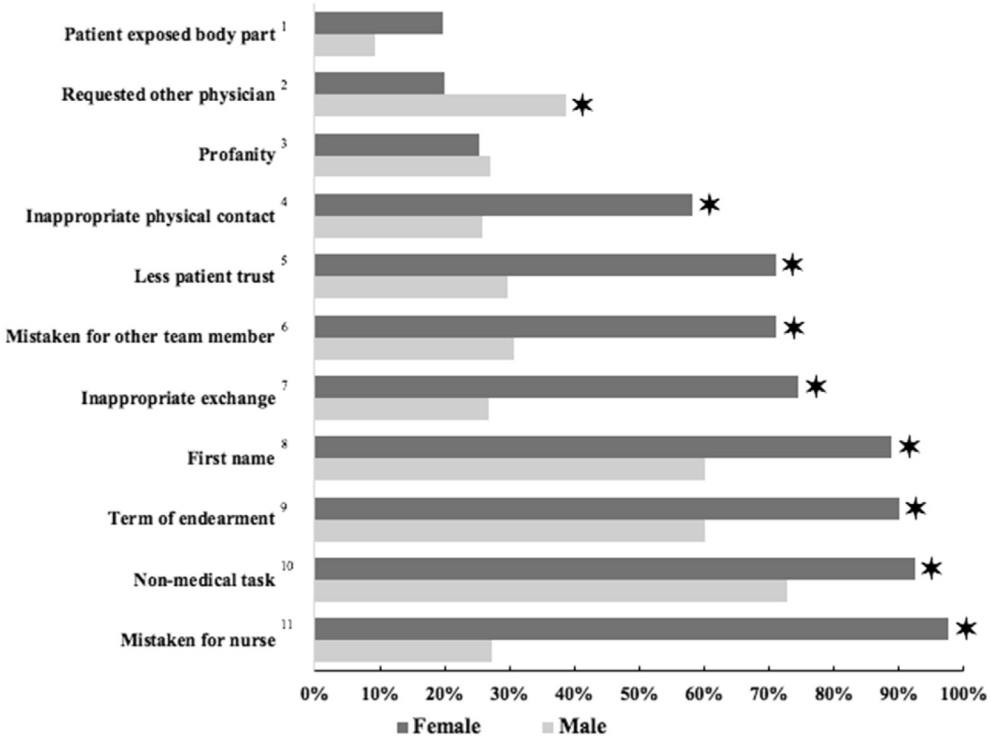

Fig. 1. Form of patient-derived GBD.
Percentages based upon total number of respondents who answered each question. P-value <0.05 denoted by: *
[1]Patient exposed a body part in a sexually suggestive way.
[2]Patient requested a physician of another gender.
[3]Patient referred to physician with profanity.
[4]Patient hugged or touched physician, not including handshake or contact performed as component of standard patient-physician interaction.
[5]Received less trust from patient due to physician's gender.
[6]Patient mistook physician for non-physician or non-nurse member of the team such as housekeeping employee, food service employee, physical therapist, or student.
[7]Negative or inappropriate exchange with patient specific to physician's gender.
[8]Patient referred to physician by physician's first name.
[9]Patient referred to physician with unprofessional term of endearment.
[10]Patient requested physician perform activity outside of primary duties as a physician.
[11]Patient mistook physician for a nurse.

The majority of residents (81.4%) responded that they had informally shared their personal or witnessed experience of patient-derived GBD, with women more likely than men to informally share their experience (88.5% of women vs 72.5% of men, $p = 0.001$). The overwhelming majority of residents (96.6%) who experienced or witnessed patient-derived GBD did not formally report this experience, with no difference in formal reporting between men and women. Of the 10 residents who formally reported patient-derived GBD, only one resident reported that something was done as a result of their report. Among the 90.8% of residents who reported that they had chosen not to report experienced or witnessed patient-derived GBD, the most commonly cited reason for not reporting was "I didn't think anything would happen as a result of the report", indicated by 68.1% of respondents. Other reasons for not formally reporting patient-derived GBD were "I was too busy" and "I didn't know how", indicated by 52.3% and 42.5% of respondents respectively. Women were significantly more likely to cite that they had "fear of negative personal or professional consequences" as a reason for not reporting (21.1% vs 11.4%, $p = 0.047$).

Women residents were more likely than male residents to respond that patient-derived GBD had affected their risk of burnout (69.9% vs 20.4%, $p < 0.001$), personal well-being (63.2% vs 11.8%, $p < 0.001$), self-doubt (60.2% vs 13.5%, $p < 0.001$), and job satisfaction (57.5% vs 18.2%, $p < 0.001$) (Fig. 2). Over one-third of women reported that their sense of personal safety had been affected by patient-derived GBD (33.4% vs 16.3% of men, $p = 0.037$), and 41.6% of women reported that their quality of care had been affected by patient-derived GBD (vs 22.6% of men, $p = 0.023$).

Discussion

This study is the first of its kind to specifically examine the prevalence, forms, and impact of patient-derived GBD in a resident physician population. The results of the survey indicate that patient-derived GBD is ubiquitous and is experienced by the majority of both men and women resident physicians. Notably, women residents experienced both higher prevalence and increased frequency of patient-derived GBD (as indicated on 0–10 scale) as compared to their male colleagues. This higher prevalence of patient-derived GBD experienced by women residents persisted across resident race, specialty, and institution. Moreover, women were consistently more likely to report experiencing higher rates of specific forms of patient-derived GBD, including receiving less trust from patients specific to their gender, receiving inappropriate touch not part of a standard patient-doctor interaction, or being mistaken for a nurse. The only form in which male respondents reported significantly higher rates of patient-derived GBD was in having a patient request a physician of another gender.

The psychosocial impact of increased rates of patient-derived GBD among women, as compared to men, was reflected in higher responses by women that patient-derived GBD had negatively impacted their personal well-being, self-doubt, and personal safety. In addition to the personal impact of patient-derived GBD on women resident physicians, results suggest that patient-derived GBD had impacted women residents professionally, with women reporting a higher impact on their job satisfaction, risk of burnout, and quality of care. Given a growing body of literature indicating the psychological and financial cost of GBD, developing effective means for addressing patient-derived GBD should be prioritized by residency programs and healthcare institutions.[2,6,13–17]

This study suggests that current reporting mechanisms for GBD do not adequately capture nor address patient-derived GBD experienced by resident physicians. Although the majority of physicians reported informally sharing their experiences of GBD, the vast majority of resident physicians did not formally report their experience of patient-derived GBD, and only a fraction of the group

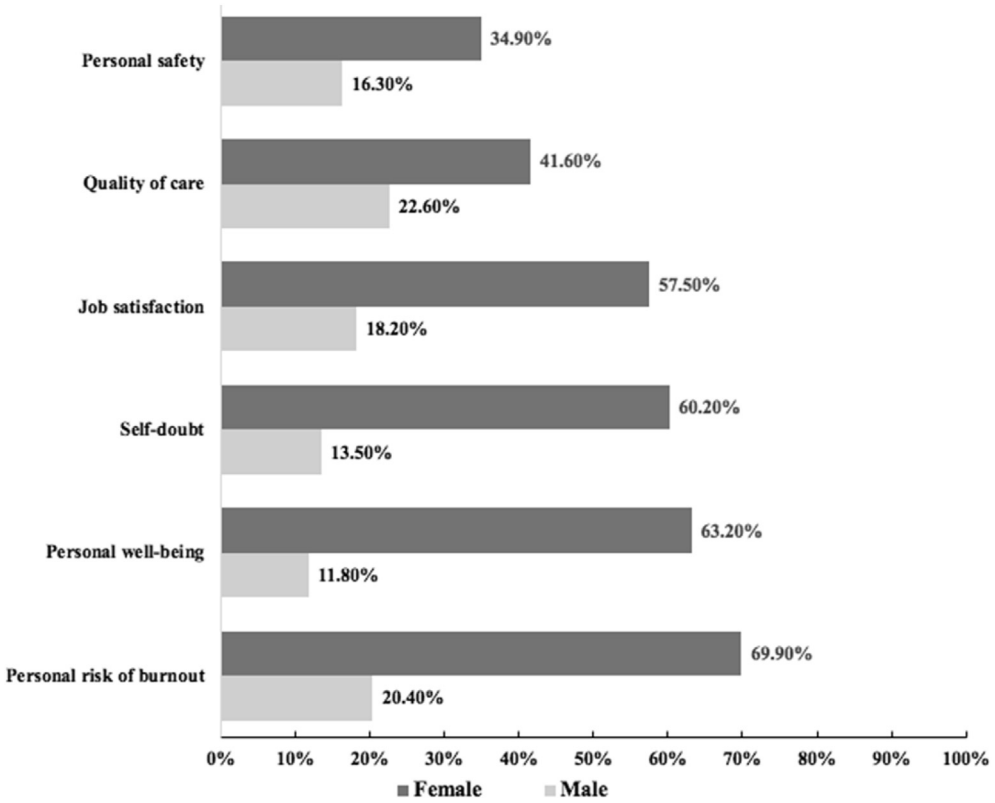

Fig. 2. Impact of patient-derived GBD.
Women demonstrated higher rates of negative impact in all 6 domains (all p-values significant at $p < 0.05$).

who reported indicated that anything was done as a result of their report. All three institutions involved in this study have robust reporting mechanisms for GBD including appointed sexual harassment officers, confidential phone lines, and employee assistance/relations programs. However, most residents in this study chose not to report due to the belief that nothing would be done as the result of their report or that it would negatively impact their career. This finding suggests that more than mandating systems for reporting, institutions must ensure that physicians trust that appropriate, transparent, and confidential action will be taken as the result of their report.[1] Additionally, a cultural shift on an institutional level is necessary to provide an environment in which resident physicians feel safe to report their experience of GBD.

Considering potential limitations to this study, although there was an approximately equal distribution of men and women respondents, it should be noted that respondents were primarily White. Moreover, this study was limited to residents at three institutions all within the same healthcare system (with 7 of the 12 programs belonging to a single institution), potentially limiting generalizability to other residency programs and other geographic areas. Additionally, with an overall response rate of 48%, the potential for non-response bias exists. Finally, as approval was obtained from residency program directors prior to enrollment of residents in the study, it is possible that the experience of residents in non-participating programs may differ from those responding, introducing a potential source of selection bias. Attempt to minimize the effects of selection bias was made by enrolling programs across multiple institutions and encompassing a range of medical specialties. Effort was made to include programs with varying ratios of men to women residents.

To address the prevalent patient-derived GBD identified in this study, cohesive, concrete, and collaborative action must be taken by medical schools, residency programs, and hospital administrations. Institution-wide policies should explicitly state a zero-tolerance policy toward GBD with protection for individuals reporting GBD.[1,23,24] Mentorship represents a source of support for residents during training, and formalized mentorship programs for students, residents, and faculty may assist in providing channels for GBD reporting, advice, and support.[1,25–27] Evaluation of a standardized mentorship program for women in residency training is currently being conducted through the Association of Women Surgeons Coaching Project.[27] Despite these efforts, there remains a lack of strong evidence for interventions to effectively address and reduce the incidence of patient-derived GBD.

Discrimination from patients represents a particularly challenging situation for healthcare systems to address, as patients represent a vulnerable population secondary to illness and a traditionally hierarchical patient-provider relationship. However, the goal of providing a safe working and learning environment for medical trainees aligns with institutions' primary aim of providing optimal patient care.[28] In order to protect staff from discriminatory behavior, clear consequences for patient-derived verbal and physical abuse must be detailed on an institutional level. Possible consequences for discriminatory behavior include having interactions with medical personnel chaperoned by a second staff member and having a flag placed in a patient's chart for repeated discriminatory/harassing behavior. A clear framework for protecting providers from patient-derived discrimination and harassment as described by Viglianti et al. provides medical staff a clear set of instructions for dealing with patient-initiated harassment and abuse.[28] A treatment agreement or "code of conduct" shared between patients and their medical staff at the time of admission may help lay the groundwork for an environment of mutual respect.

Although results from this study indicated no significant differences in patient-derived GBD experiences by race, prior studies indicate that healthcare providers of color routinely experience discrimination, including from patients.[29,30] Future research should specifically examine how the experience of patient-derived GBD differs by race, as it is essential that all solutions to address gender discrimination explicitly consider how manifestations of discrimination may overlap and compound secondary to an individual's race and gender identity.

Several of the institutions involved in this study are currently in the process of implementing a campaign to promote gender equity and reduce sexual harassment.[31] This cross-institution campaign includes clear commitment from institutional leadership, educational forums, resident online training modules for addressing GBD, bystander training modules, and clear complaint investigation protocols and timelines.[31] Web-based simulation training specifically seeks to address the actions healthcare providers should take when confronted with patient-derived GBD.[31] Studies are urgently needed to assess the efficacy of these initiatives, as well as to investigate other potential means of reducing the frequency and impact of patient-derived GBD on medical trainees.

Conclusion

This study provides first evidence that patient-derived GBD directly affects a majority of women and men residents across specialties and institutions with significant impact on physician-reported quality of care, personal safety, and risk of burnout. Patient-derived GBD disproportionately affects women, with all women in this study having personally experienced patient-derived GBD. Interventions to address and reduce patient-derived GBD constitute a priority to ensure the productivity, wellbeing, and safety of resident physicians.

Acknowledgements

The authors would like to acknowledge the support of the Massachusetts General Hospital departments of General Surgery, Vascular Surgery, Neurosurgery, Anesthesiology, Internal Medicine, Pediatrics, and Radiology, the Brigham and Women's Departments of Emergency Medicine, Otolaryngology, Medicine-Pediatrics, and Urology, and the Beth Israel Deaconess Medical Center Department of Anesthesiology. The authors would also like to acknowledge the generous support of Marian and Bob Ettl without whom this work would not have been possible. A special thanks is given to Dr. Susan Philips for her work in this field over two decades ago and for her assistance with survey design.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.amjsurg.2020.10.015.

Funding

Funding for participant incentives was provided by the Massachusetts General Hospital Department of Surgery (2008A055146).

Ethical approval

The survey protocol was approved by the Institutional Review Board of Partners Healthcare Protocol number 2018P001269.

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